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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,110	09/17/2003	Yoshiaki Nakamura	NEC NE1150	4764

7590 09/21/2005

Attn: Norman P. Soloway
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EXAMINER

ENGLUND, TERRY LEE

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4A

Office Action Summary	Application No. 10/664,110	Applicant(s) NAKAMURA, YOSHIAKI	
	Examiner Terry L. Englund	Art Unit 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 3, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 10 is/are allowed.
- 6) ☒ Claim(s) 2-8 and 11-19 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11202003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to because Fig. 1 identifies block 11 as a “CONSTANT CURRENT SOURCE.” However, from the disclosure and claimed limitations, the current output from that block is the difference between a constant current and a variable type current. Therefore, how or why is this considered a “CONSTANT” current source? Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not believed to be accurately descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. For example, if the output current is the difference between a constant current and a variable current, the current circuit would not provide a “constant” output current. Therefore, correction and/or clarification are requested.

Similarly, the abstract of the disclosure is objected to because the use of “A constant current circuit” on the first line appears to be misleading. For example, if the output current is the difference between a constant current and an inversely variable current, under what circumstances will the circuit provide a constant current? It is suggested the phrase “a first and as second group” on line 1 be changed to either --a first group and a second group--, or to --first and second groups-- to improve word flow. Correction and/or clarification are required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: Page 1, line 30 should have “filters” made singular to correspond with its “a particular type” phrase. Page 6, line 25 should have --collector-- instead of “connector.” Page 7, line 20 “34 and 35” should be --31 and 32-- to correctly identify the input related terminals shown within Fig. 1. Page 10, line 23 “an” should be --and--. Appropriate corrections are required.

Claim Objections

Claims 1-8, and 17 are objected to because of the following informalities: The use of “constant current circuit” in the preamble of claims 1-8 is misleading. For example, if the output current is the difference between a constant current and a variable current, how or why would the

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overall current circuit be considered “constant”? Therefore, it is suggested the “constant” be deleted from the preamble of each of claims 1-8. To minimize possible confusion between the singular “said third transistor” with the possibility there can be more than one third transistor, it is suggested --at least one-- be added prior to “third transistor” on line 6 of each of claims 6 and 17. In each of claims 8 and 19, it is suggested “a” be deleted from line 11 since it does not correspond with the plural use of “resistors”, and --a-- should be added prior “collector” on line 12, to improve word flow. Appropriate corrections are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-8, and 11-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Since claim 1 recites the second current “is inversely variable with said resistance variations”, it is not clear how the second current is variable depending on the base-emitter voltage of a transistor, or on a power-line voltage, as recited within claims 2 and 3, respectively. For example, is the second current also variable with respect to either one of those circumstances, or do those conditions vary the resistance? It is not understood how the second current source produces a variable current if it is “a band-gap type constant current source” as recited within claim 4 since variable and constant are contradictory terms. It is not clear how “respective resistors” on lines 4 and 7 of claim 5 relate to one another, and to the “plurality of resistors” recited on line 1 of the same claim. For example, are these respective resistors within the plurality of resistors, or are they different resistors? The use of “one third

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transistor” on line 3 of claim 6 is confusing because the first/second transistors have not been clearly identified. For example, how does this “third transistor” relate to the first and second groups of transistors cited in claim 5? To help clarify distinguish these groups (or transistors) from one another, it is suggested --first-- be added prior to “transistors” on line 3 of claim 5, and --second-- be added prior to “transistors” on line 6 of claim 6. It is not understood how the “resistor” of the “transistor-resistor circuitry” of claim 5 (line 14) relates to the “plurality of resistors” recited within the preamble. For example, is this “resistor” also part of the plurality? Related to this, how does each occurrence of “a resistor” within claim 6 (i.e. see lines 3, 9, and 12) relate to each other, and to the “plurality of resistors” within claim 5; the “pair of resistors” and “a resistor” of claim 7 (i.e. see lines 3 and 6) relate to one another and to the “plurality of resistors” in claim 5; and the “respective resistors”, “series-connected resistors”, and “a resistor” of claim 8 (i.e. see lines 3-4, 11, and 18) relate to one another and to the “plurality of resistors” in claim 5? The use of “third transistor” within claim 7, and the use of “third and fourth transistors” within claim 8, imply first and second transistors that have not been clearly identified. Therefore, similar to a claim 6 section described above, it is suggested the first/second groups of transistors recited within claim 5 be modified to cite first/second groups of first/second transistors. It is not clear in claim 11 how “an input signal” on line 5 relates to “an input signal” recited within claim 9, lines 11-12. For example, are these signals referring to the same signal, or to signals different from one another? It is not understood how the “resistor” of the “resistor-capacitor circuitry” of claim 11 (line 6) relates to the “plurality of resistors” and “said resistors” recited within claim 9. For example, is this “resistor” included in the plurality of resistors/said resistors? Since claim 9 recites the second current “is inversely variable with said

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resistance variations”, it is not clear how the second current is variable depending on the base-emitter voltage of a transistor, or on a power-line voltage, as recited within claims 12 and 13, respectively. For example, is the second current also variable with respect to either one of those circumstances, or do those conditions vary the resistance? It is not understood how the second current source produces a variable current if it is “a band-gap type constant current source” as recited within claim 14 since variable and constant are contradictory terms. For the same reasoning as described above with some of the claims, how do the “respective resistors” (lines 4 and 7), “resistor” of the “transistor-resistor circuitry” (line 14), and “resistor” of the “resistor-capacitor circuitry (line 2) within claim 15 relate to the “plurality of resistors” cited in its preamble. For example, are all these resistors included within the “plurality of resistors formed on a semiconductor substrate”? Related to this, how does “a resistor” on line 10 of claim 16 relate to claim 15’s plurality of resistors? The “at least one third transistor” in claim 17 (line 3) implies first and second transistors that have not been clearly identified. For example, how does the “third transistor” relate to the transistors within the first/second groups of claim 15? [Note: Claim 16 recites first-fourth transistors. Therefore, if the groups within claim 15 groups are modified to recite first/second transistors, this would create confusion with the first/second transistors within claim 16.] It is not clear how each occurrence of “a resistor” within claim 17 (i.e. see lines 3, 9, and 12) relates to one another, and to the plurality of resistors recited within claim 15. It is not understood how “a pair of resistors” and “a resistor” in claim 18 (i.e. see lines 3 and 6) relate to one another, and to the plurality of resistors recited within claim 15. Claim 18, line 5 “a third transistor” implies first and second transistors that have not been clearly identified. Similar to this, how do the “respective resistors”, “series-connected resistors”, and “a resistor” of

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claim 19 (i.e. see lines 3-4, 11, and 18) relate to one another, and to the “plurality of resistors” in claim 15?

Claim 15 recites the limitation "said output current" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Dependent claims carry over any rejection(s) from any claim(s) upon which they depend.

Allowable Subject Matter

Claims 9 and 10 are allowed. There is presently no strong motivation to modify or combine any prior art reference(s) to ensure the output current driving the active filter is the difference between a constant first current and a variable second current as recited within claim 9, upon which claim 10 depends.

Claim 1 is objected to as described above, but would be allowable if rewritten to address/correct its objection. There is presently no strong motivation to modify or combine any prior art reference(s) to ensure the output current is the difference between a constant first current and a variable second current as recited within claim 1.

Claims 5, and 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. Similar to claims 9 and 5 described above, there is presently no strong motivation to modify or combine any prior art reference(s) to ensure the output terminal draws the constant and variable currents as recited within claims 5 and 15.

Claims 2-4, 6-8, 11-14, and 16-19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims 2-4 depend on claim 1;

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claims 6-8 depend on claim 5; claims 11-14 depend on claim 9; and claims 16-19 depend on claim 15.

Prior Art

The prior art references cited on the accompanying PTO-892 are deemed relevant to at least sections of the claimed inventions. Kim and Shirai both show/disclose circuitry that combine two varying currents (e.g. in opposite directions) as a means for providing basically a constant current out. Labram et al. shows/discloses the combination of constant current I_{ref} with an inversely varying current I_{mes} to obtain difference current I_{dif} . However, this reference lacks the plurality of resistors, and relationships to the resistance variations.

The prior art references cited on the IDS submitted on Nov 20, 2003 were reviewed and submitted. Neither reference clearly shows or discloses the relationships between the constant current, variable current, resistance variations, and output current as recited within the claims of the present application.

Note: The reference number for the second document was corrected because its last two digits were apparently transposed. The corrected number --07-321602-- corresponds to the copy of the reference submitted, or to the publication cited on line 3 of page 2. However, it is noted that the original document number cited does correspond to the English patent abstract, but that relates to a semiconductor manufacturing device, and not to the circuitry shown within "7-311602." Also, the class/subclass of this reference was changed to reflect to correct document's classification.

Any inquiry concerning this communication from the examiner should be directed to Terry L. Englund whose telephone number is (571) 272-1743. The examiner can normally be reached Monday-Friday from 7 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (571) 272-1740.

The new central official fax number is (571) 273-8300.

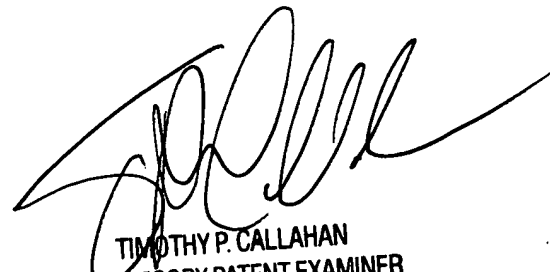
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLE

Terry L. Englund

12 September 2005


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